



**Minuteman
Repeater
Association**

The Minuteman



Volume 52 Number 3 January 2023

The Minuteman Repeater Association is a non-profit organization providing communications infrastructure and volunteers for community and emergency events.

Membership Meeting: Wednesday, 18 January 2023 ~7:30—9:30 pm

The “new” FCC RF Exposure Rules— Larry Banks, W1DYJ

This is a Hybrid meeting: New England SciTech + ZOOM

(Directions to New England SciTech on Page 7)

Members: log into your account on MMRA.ORG to obtain the ZOOM info.

Non-members: send an email to contact@mmra to request the ZOOM info.

[The FCC recently changed the rules about RF Exposure for all of us.](#)

The exposure criterion have not changed, but the rules about assessing our station's exposure have. Larry recently assessed his station to meet these new rules. It was easier than he expected, and he learned a few things along the way. This may be a model that will help you evaluate your station.

Larry was licensed in 1962 as novice KN1VFX and became W1DYJ in 1966. From 1969 to 1985 he was an engineer and project manager for Hewlett-Packard Medical in Waltham and Andover MA, first developing electrocardiographs and then having the fortune to be involved with developing the first commercially successful cardiac ultrasound system. He then assumed responsibility for establishing both the cardiac R&D lab's Computer Aided Design environment and the SW Testing and Quality group, along with ongoing responsibility for the Printed Circuit Layout group, the technical library, ongoing technical education, and ISO9001 as the R&D Section Manager for “R&D Process Improvement.” *(This was the heyday for Total Quality Control, and applying ISO9000 to an R&D lab was quite an education... Worse than herding cats!)*

He moved to HP Medical Education in 1993 to be responsible for technical and project management training. When Agilent split out of HP in 1999, he became Agilent Technology's global program manager for their Learning Management System. He “retired” in 2005 and then consulted for Avago Technologies (now Broadcom) on eLearning technologies through 2012.

Larry holds three degrees in EE from MIT. He spends his time chasing DX and contesting in Woburn, traveling with his wife Maren (pre-Covid and hopefully again,) and attending as many jazz and classical concerts as they can. He is also the net manager and newsletter editor for the MMRA, publications editor for HamXposition, a member of the YCCC, and continues as a member of the Merry-meeting ARA in mid-coast (Brunswick) ME, where he and Maren had a 2nd home from 2008-2021.

Table of Contents

MMRA Information	1, 2, 10-11
Presidents Corner	3
November Membership Meeting	4-6
TiaOS Net Annual Report	7
December Business Meeting	8-9

About the Minuteman Repeater Association

MMRA Control Operators Responsibilities

<https://www.mmra.org/MMRACOPolicy-March2019.pdf>

The Minuteman Repeater Association (MMRA) is dedicated to Amateur Radio and public service. The MMRA maintains a large system of repeaters in Eastern Massachusetts.

The MMRA meets each month from September to June. Meeting times, locations, and talk-in frequency vary and are announced in this newsletter and on weekly nets. Meetings are open to all interested parties. Guest speakers and programs of general interest occur in September, November, January, March, and May. The intervening meetings are also open to all members and are for general business.

The Minuteman newsletter is emailed one week before each general interest meeting. Members are encouraged to submit articles: send to the editor at newsletter@mmra.org. The deadline for articles is the last Friday of the month preceding the meeting.

Each Tuesday evening at 8pm the MMRA links most of the repeaters for an open net. The topic is "Technical Information and Other Stuff". Join us!

Membership in the MMRA is open to all radio amateurs. Annual dues are \$25 per individual or \$35 per family. See our website for details.

Contact information is listed on the top of the last page of this newsletter.

No part of this newsletter can be copied or posted elsewhere without prior approval from the club.

MMRA QRM Policy

MMRA members and all other operators are strongly encouraged to report repeater activity that does not abide by Part 97 rules or accepted amateur radio practice to the board of directors at contact@mmra.org or via other means.

The most effective way (and probably the only effective way) to deal with an individual causing QRM is to NOT engage with that individual on the air. Please include the time and date of any incident.

Repeater and Frequency Information

Band	XMTR Location	Freq	PL	Call	Linking To:	
					Hub 1	Hub 2
10m	Marlboro East	29.680	131.8	W1MRA	PTL	PTL
Linked to 146.79: 9am-3pm every day						
6m	Marlboro East <i>Remote receive Marlboro West: PL=100</i>	53.810	71.9	W1BRI	PTL	PTL
2m	Brookline	145.160	na	K1MRA	D-Star (REF050C)	
	Belmont	145.430	146.2	KC1CLA	PTL	FTL: DARI
	Mendon	146.610		K1KWP	FTL	PTL
	Quincy	146.670		W1BRI	PTL	PTL
	North Reading	146.715		KC1US	PTL	PTL
	Weston	146.790		N1BE	PTL	PTL
				Linked to 29.68: 9am-3pm every day		
	Boston <i>Remote receive in Brookline Boston: PL = 127.3</i>	146.820		K1BOS	FTL	PTL
	Billerica <i>Output tone = 162.2</i>	147.120		W1DC	PTL	PTL
Marlborough	147.270	W1MRA		PTL	PTL	
1½m	Marlborough	223.940	103.5	W1MRA	PTL	PTL
	Quincy	224.400		N1KUG	PTL	PTL
	Weston	224.700		N1NOM	PTL	PTL
	Burlington	224.880		KC1US	PTL	PTL
70cm	Lowell	442.250	88.5	W1MRA	FTL	PTL: 446.775
	Weston *	442.700	88.5	N1DCH	Network Hub 2 (PTL to Hub 1)	
	North Reading <i>System Fusion</i>	446.775	88.5 Linked 71.9 Local	W1DYJ	FTL [88.5]	PTL [88.5]
	Marlborough	448.225	na	W1MRA	D-Star (REF050C)	
	Hopkinton <i>System Fusion</i>	449.575	88.5 Linked 71.9 Local	W1BRI	FTL [88.5]	PTL [88.5]
	Marlborough *	449.925	88.5	W1MRA	Network Hub 1	
33cm	Boston *	927.0625	D244	K1RJZ	PTL	PTL
	Marlborough *	927.700		W1MRA	PTL	PTL
PL out = 131.8						
Marlborough		144.390	none	W1MRA	APRS Digipeater	
???		145.630	146.2	W1MRA	Fox Box	
*Internet	HUB1– 449.925: IRLP node 4133 / Echolink node 4133 Connected to Echolink NEWENG2 conference (9127) for TIAOS net.					
	HUB2 – 442.700: IRLP node 4136 / Echolink node 4136 Connected to 220 Reflector 9124 on Tuesdays					
	927.0625: IRLP 4977		Normally linked to the NE900 Reflec- tor, 9125. Linked to MMRA via “NEW- ENG2” node 9127 for the TIAOS net. Normally linked together.			
	927.700: IRLP 4978					
	Notes: FTL = Full Time Linked (or default state) PTL = Part Time Linked (on schedule or demand) Note — a repeater can be linked to only one Hub at a time, however the two hubs can also be linked together.					

President's Corner ~ David Hornbaker, N1DCH

Greetings and Happy New Year 2023!

January Membership Meeting: Guest Speaker Larry Banks – W1DYJ: The “new” FCC RF Exposure Rules.

In person at New England Sci-Tech in Natick, MA (**See Page 7**) Meetings are a great place to meet and greet your fellow hams and to welcome our new members. Bring a friend, you do not have to be a member to attend.

Via Zoom: All MMRA meetings are also available via Zoom. The Zoom code is available to members on <http://www.mmra.org>. If you need assistance getting connected, contact us at contact@mmra.org. If you are not a member, you can request the meeting code via email at contact@mmra.org.

AARC Flea Market: I look forward to seeing you at the Algonquin Amateur Radio Club Flea Market on February 18th. Please stop by our table and say hello.

For more information see: https://www.qsl.net/n1em/AARC_Flea_Market_Flyer_2023.pdf

VE Exams: The January VE Session will be held on Saturday, January 14th at 9:00 AM, at Marlborough Central Fire Station, 215 Maple St (RT 85), Marlborough, MA

Directions: <https://www.bing.com/maps?q=215+maple+st+marlborough+ma&FORM=HDRSC4>

The February VE Session will be held on Saturday, February 18th at 9:00 AM at the Algonquin Amateur Radio Club Flea Market. 1Lt Charles W. Whitcomb School, 25 Union St, Marlborough, MA

Directions: <https://www.bing.com/maps?q=25+Union+St%2c+Marlborough%2c+MA+01752&FORM=HDRSC4>

Walk-ins are welcome. Please remember to bring a State ID, your FRN, and if upgrading, a copy of your current license (from FCC website). For more information, contact Ron – WO1E at ve@mmra.org or wo1e@mmra.org.

Net Control Operators wanted: Interested in becoming a control operator for the TlaOS net? Larry is looking for a back-up operator. Contact Larry Banks – W1DYJ: w1dyj@mmra.org.

Membership renewal: All MMRA memberships expire on August 31. Please check your profile and if your membership expired in 2022, please renew. Renewals may be done on the website, or you can mail your renewal to Minuteman Repeater Association, PO Box 669, Stow, MA 01775-0669. Please allow 7 days for us to process your renewal. Please allow 14 days for renewals that are mailed. While you're on the website (<https://www.mmra.org>) checking your expiration date, and please verify your email address.

Free Membership: Do you know someone that has passed the Technician test (element 2) in the last year? They are eligible for free membership in MMRA. Have them send email to contact@mmra.org requesting membership. The club secretary, Jason – W1HFP, will contact them with details on how to qualify.

Tuesday Net: Join us Tuesday night at 8:00 PM for our weekly Technical Information and Other Stuff (TlaOS) net. There will be a lively discussion on all sorts of ham issues, including equipment, antennas, software, repeaters, and other stuff. The main purpose is to test our ability to link up the repeaters in case of an emergency or to support an event like the Boston Marathon. You can also join via EchoLink if your radio is a little under the weather. See below for more information.

You can find out more information about how and when the repeaters are linked on the website (https://www.mmra.org/repeaters/repeater_linking.html).

Please remember to keep your profile up to date, especially if your email changes. Note that if your callsign changes, send email to contact@mmra.org and we will update your callsign in the database.

16 November 2022 Membership Meeting ~ Minutes

Called to order @ 7:33 PM

With a short meeting agenda, it was decided to put John Portune's anticipated Presentation at the beginning of tonight's meeting. His presentation will follow later in these Minutes.

Repeater Status Report – from Bob DeMattia – K1IW –

Prudential Antenna - The new mast and antenna are still in his garage awaiting the Pru. Bob is eager to get this out of his garage and to the site. We are also looking forward to the improved signal in Boston and the surrounding outlying areas.

10 Meter Weston Receiver: - When this is working the signal is very good, but the intermittent functioning still remains making the 10 meter option inconsistent.

2 Meter Weston Repeater - Bob will be working on the 2m Kenwood and amplifier by the end of the month, and it should be installed by the end of the year.

North Reading: When DR2X malfunctions, a reset is required.. Bob installed a Kasa Smartswitch so he can reset it remotely.

All other MMRA Repeater systems normal – Last Saturday, November 12th ARES had a practice emergency drill from 10:00 AM to 12:00 PM. The MMRA Repeaters involved worked well.

VE Exam Session: Saturday, November 19th at 9:00 AM at the City Church Marlborough, 72 Jefferson Street, 2nd Floor (the Shoebox Building, next to Kelleher Field), Marlborough MA. Contact Ron (WO1E@mmra.org) for more information.

Please tell your friends, who are interested in taking tests, that they must have photo IDs and FRNs

Copy of license required if upgrading (or Proof from the ARRL, or QRZ website)

Note: Social Security numbers are no longer accepted by the FCC Everyone must have an FRN

Other Business: - A brief discussion on alternative upcoming meeting places mentioned a few places beyond the NE Science Tech Center and the main Fire Station Training Room in Marlborough. This is exploratory and any member is welcome to make additional suggestions. For example, the Stow Auditorium was mentioned. Any potential meeting place must have internet access as all meetings will be hybrid.

One other suggestion made is to hold our Board Meetings only on Zoom. No decision on that was made tonight.

Upcoming Meetings (see page 10 for updates)

December 21, 7:30 pm – Business Meeting

New England Sci-Tech & Zoom Teleconference

January 18, 7:30 pm – The "New" FCC RF Exposure Rules: A Practical Methodology

Larry Banks – W1DYJ

TBD & Zoom Teleconference

February 15, 7:30 pm – Business Meeting

TBD & Zoom Teleconference

March 15, 7:30 pm -AREDN Michael Ford – WZOC (tentative)

April 19, 7:30 pm – Business Meeting

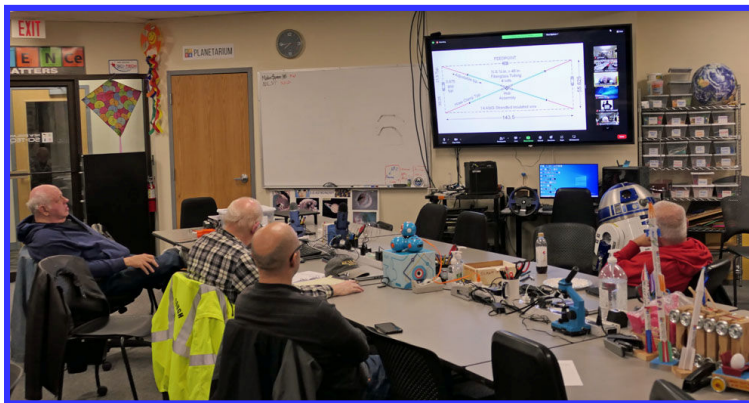
Tuesday night, 8:00 pm (year long)

Technical, Information and Other Stuff Net

MMRA Linked Repeaters

16 November 2022 Membership Meeting ~ Minutes, cont'd

Feature Presentation – Build a 10M Moxon Antenna – John Portune – W6NBC briefly stated the Moxon Antenna is a 2 element Yagi with the ends folded inward. The design is similar to a hex beam. It is a closed-spaced wire Yagi. It starts with the Reflector then the Director. Many articles have been published on this topic. See ARRL “On The Air” March, 2022 magazine page 11 & “On The Air” March, 2021 page 13. John also has an extensive list of other articles published August, 2022 QST, page 30; November, 2022 QST Pages 20 & 32 and 46 additional QST Articles. “Ten-meter Moxons are typically about 12 feet wide and weigh less than 10 pounds.” On The Air” March, 2022, p 11.



For those General and above class operators, John presented how to make the Moxon Antenna into a multiband. He also presented the Moxon Calculator which can be found on <http://www.tippete.net/cgi-bin/moxgen.pl>.

Meeting Attendees - At New England SciTech

Dave Hornbaker, N1DCH; Larry Banks, W1DYJ; Daniel McEleney, AC1JL;
Jason Peardon, W1HFP; Stephen Babbitt, KC1LPZ; Bob Phinney, K5TEC;

Zoom Meeting Attendees: Kevin Paetzold, K1KWP; John Spencer, WA1MDD; Roger Coulson, WA1NVC;
Howard Shpegel, AC1MN; John Portune, W6NBC; Rob Evans, N1BE; Bill Nicholson, N1WEN; Bob Phinney, K5TEC

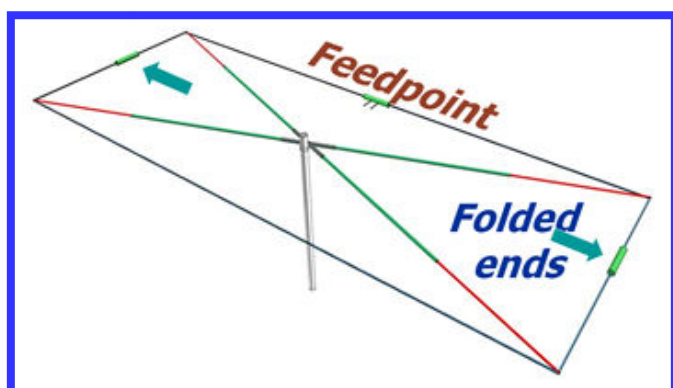
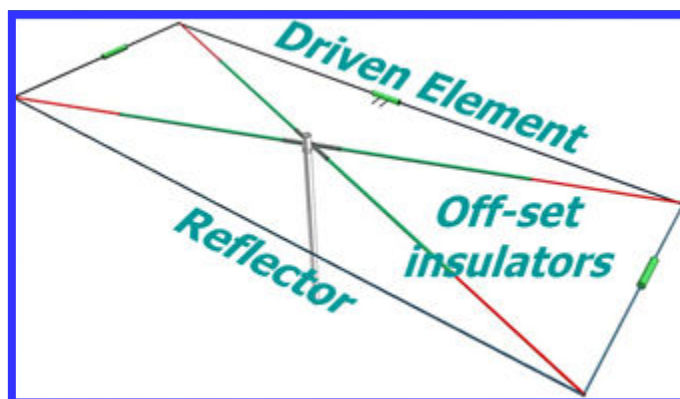
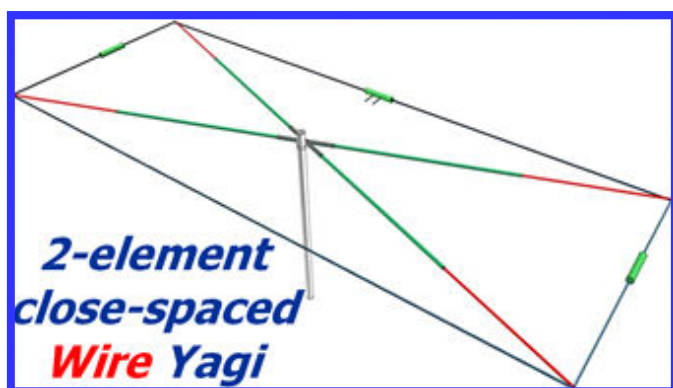
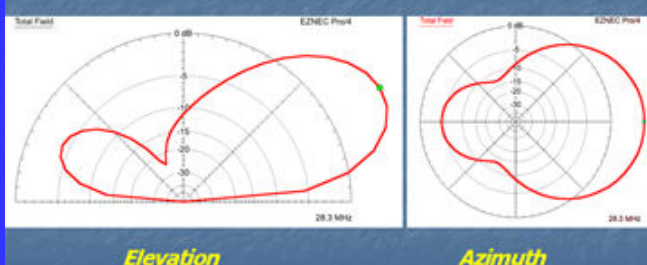
Meeting Adjourned at 8:45 PM

Respectfully Submitted by Stephen M Babbitt – KC1LPZ – Clerk

A few of the slides from John's presentation
Thanks to John, W6NBC, for sharing his slides!



A Few of the slides from John's presentation, continued

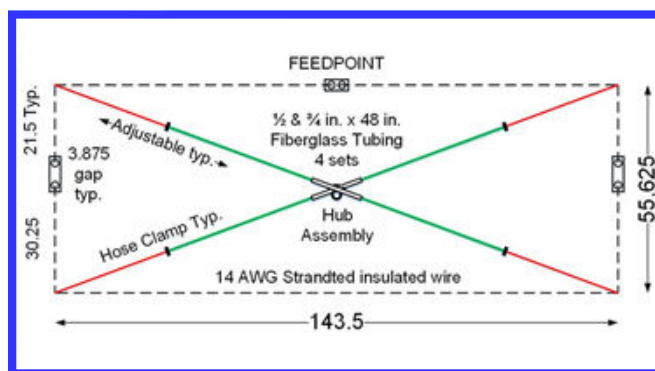
10-meter Moxon at 15 ft. ($\sqrt{2}$)

tippete.net/cgi-bin/moxgen.pl

Moxon Calculator

Frequency in MHz
 Wire Diameter AWG

John Simpson, KG4ZOW Download source code for this program
 Moxon algorithm and diagram are from <http://www.cebik.com/moxon/moxgen.html>



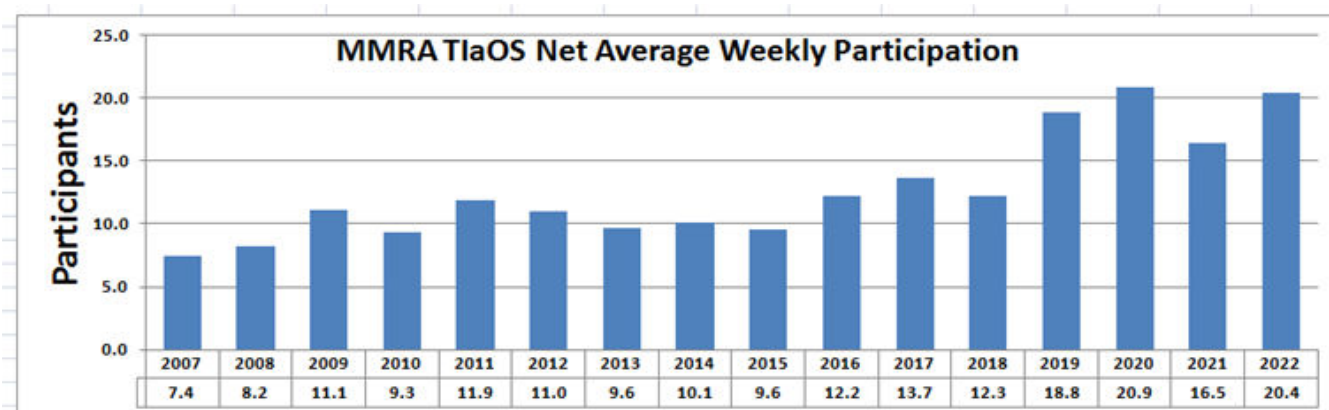
You can read John's (and Jim Bailey, W6OEK's) article in the November 2022 issue of **On The Air** if you are an ARRL member.

(You ARE an ARRL member, right?)

Repeater Update ~ Bob DeMattia, K1IW

Happy 2023 to all! We are locked and loaded for the Prudential Center move, but have not heard back from the building management. When they are ready, so are we! The Weston repeater upgrade is also delayed. Due to unforeseen issues during set up, the amplifier needs to be sent back to Henry Radio for repairs. This will probably delay installation until at least February, perhaps longer. The new Billerica repeater seems to be operating great. One note however: The TX output tone has been changed to 162.2 to avoid interference issues. The input tone remains the MMRA standard 146.2.

Annual TiaOS Net Report ~ Larry Banks, W1DYJ



We continue to see weekly participation averaging around 20. The largest participation during 2022 was on 26 April, with 31 check-ins. I want to thank Tom, KB1OQA; Ed, KC1CLA; Kevin, K1KWP; and Jonathan, K1BTZ for being net controls during this past year. We all hope to hear you Tuesday nights at 8 pm.

And we would be HAPPY to have you (any of you...) volunteer to be a Back-Up NC!!! We have a script you can use.. All of our current NCs would welcome you to the "club."

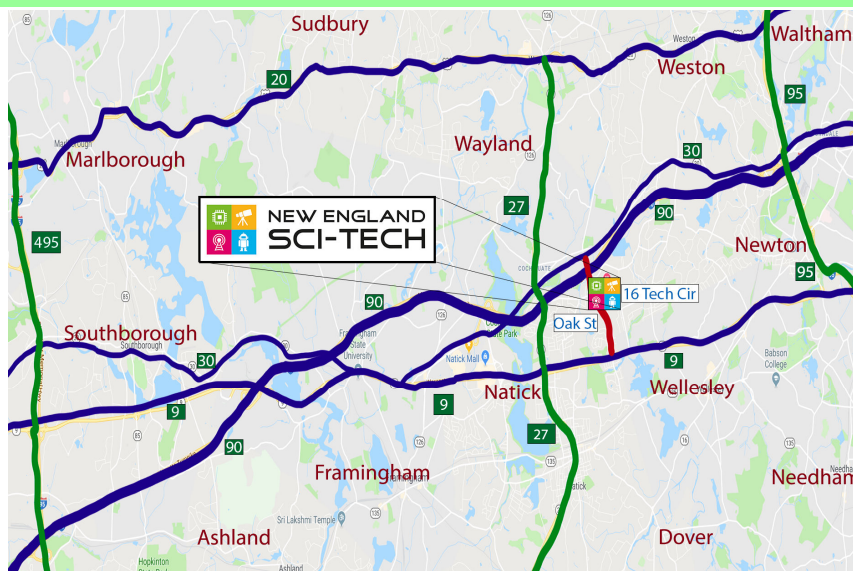
Directions to New England Sci-Tech Inc.

16 Tech Circle <https://www.nescitech.org/directions/> **Natick MA 01760**

From the north: take Rt 95 or Rt 27 or Rt 495 south to Route 30 toward Wayland. Once in Wayland, turn South on Oak Street and in 1/2 mile look for Tech Circle on your left. Follow Tech Circle to the end.

From the south: take Rt 95 or Rt 27 or Rt 495 north to Route 9 toward Natick. At the Wellesley-Natick line, turn North on Oak Street and in 1/2 mile look for Tech Circle on your right. Follow Tech Circle to the end.

From the east or west: follow either Rt 30 or Rt 9 toward Natick, turn onto Oak Street at a set of traffic lights, and in 1/2 mile look for Tech Circle. Follow Tech Circle to the end.



20 December Business Meeting ~ Minutes

Called to order @ 7:38 PM

Repeater Status Report – from Bob DeMattia – K1IW –

Prudential Antenna – On the relocation we last heard from them in early November that it would happen in November. However, we have not heard anything yet. All items are ready to go when we get the call.

Billerica – Antenna replacement is completed. The link audio was low. That issue has been fixed, thanks to John – W1NI. Kevin – K1KWP -added that the antenna seems to have less gain.

Weston – The new 2m Kenwood & amplifier are here and Bob will be working on it during Christmas Break.

North Reading: The Kasa Smartswitch allows Bob to reset it remotely, but a more permanent solution will be installed in the Spring. The PL tone issue remains. Bob, K1IW, suggested that this is the next 2m repeater to upgrade. Also, we need to do a thorough cleaning at the site (cobwebs, dust, mice excrement).

10 Meter Weston Receiver: -Still inconsistently works. Larry – W1DYJ -mentioned the link audio has problems. When working the signal is very good, but the intermittent functioning makes the 10 meters option not very useful.

Mendon – Persistent login attempts detected from numerous IP addresses. This is occurring on Billerica and Burlington to a lesser degree. While not much of a security problem, excess bandwidth is consumed to the tune of 18-30 MB/day. Port forwarding turned off. Access is now through the main server.

Hopkinton – An incident report from John Iwuc – KB1VXY – who is President of the Framingham Amateur Radio Association that the repeater was displaying bursts of static when accessing our Tuesday evening Net. But his last net access the repeater was functioning normally. No further action will take place other than this mention in these Minutes.

All other MMRA Repeater systems normal –

TlaOS Net – Larry, W1DYJ, reported that the NH folks start their Tuesday night traffic net right at 9:00 PM, sometimes before the TlaOS net has finished. Bob, K1IW, will talk to Bernie (our contact at NH) to resolve this sometime issue

Algonquin Amateur Radio Club Flea Market: This annual event is taking place on Saturday February 18, 2023 at the Whitcomb Middle School in Marlborough from 9 AM to Noon. A motion was made by Larry – W1DYJ – to spend up to \$30 for two tables for this event. Seconded by Bob – N1BE – with the motion passing unanimously.

Bob -K1IW: Ken – KA1GFN & Kevin – K1KWP discussed the locations available for our Tables with payment arrangements from Kevin. Bob will do some of the table coverage and asks that other members assist with table coverage too.

Dave – N1DCH will arrange to have approximately 50 brochures printed up that will include the Billerica site. He and Larry will do the final edit should any additional updates be needed.

20 December Business Meeting ~ Minutes—cont'd

VE Exam Session: Saturday, February 18th at 9:00 AM at this AARC Flea Market Event. Dave – N1DCH – and Steve – KC1LPZ - are members of the VE team. We ask, please, that Test Candidates obtain an FRN as SS# are no longer used by the FCC. Also needed will be a photo id and a copy of your license, if you are planning to upgrade. Contact Ron (WO1E@mmra.org) for more information.

January VE Exam Session – Schedule Changed to Jan 14, 2023 at the Marlborough Central Fire Station. This is the 2nd Saturday in January instead of the usual 3rd Saturday.

Upcoming Meetings

January 18, 7:30 pm – The "New" FCC RF Exposure Rules: A Practical Methodology

Larry Banks – W1DYJ

New England Sci-Tech & Zoom Teleconference

February 15, 7:30 pm – Business Meeting

Zoom only Teleconference

March 15, 7:30 pm -AREDN Michael Ford – WZOC

New England Sci-Tech & Zoom Teleconference

April 19, 7:30 pm – Business Meeting – Zoom only Teleconferencing

May 17, 7:30 pm – Annual Elections

Speaker TBA

Marlborough Central Fire Station & Zoom Teleconference

Tuesday night, 8:00 pm (year long)

Technical, Information and Other Stuff Net

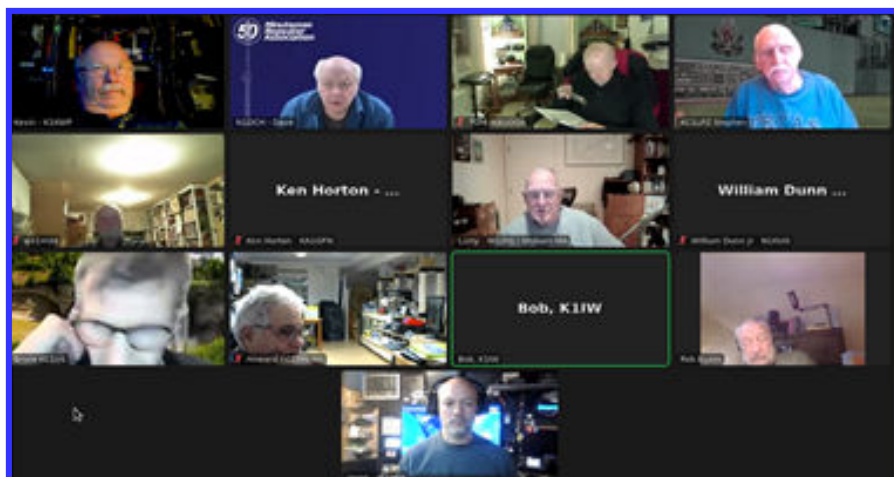
MMRA Linked Repeaters

MMRA Newsletter – Deadline for submissions is Friday, December 30th. Email Larry Banks

W1DYJ@mmra.org

Meeting Attendees – Zoom only

Dave Hornbaker, N1DCH; Larry Banks, W1DYJ; Tom Turner, KB1OQA; Bob DeMattia, K1IW; Jason Peardon, W1HFP; Stephen Babbitt, KC1LPZ; John Spencer, WA1MDD; Kevin Paetzold, K1KWP; Howard Shpegel, AC1MN; Rob Evans, N1BE; Bruce Pigott, KC1US; Bill Dunn, N1KUG; Ken Horton, KA1GFN



Meeting Adjourned at 8:55 PM

Respectfully Submitted by Stephen M Babbitt – KC1LPZ – Clerk

Upcoming MMRA Meetings

Note: Meeting locations and times are subject to change.

Consult the MMRA website for the most up-to-date information. ZOOM

Teleconference login info is available

once you log into your account on MMRA.ORG

Non-members: if you wish to attend, email contact@mmra.org.

Wednesday, 18 January – Membership Meeting ~ 7:30

Location: New England Sci-Tech + Zoom Teleconference

Topic: The “new” FCC RF Exposure Rules— Larry Banks, W1DYJ

Wednesday, 15 February – Business Meeting ~ 7:30

Location: Zoom Teleconference

Wednesday, 15 March – Membership Meeting ~ 7:30

Location: New England Sci-Tech + Zoom Teleconference

Topic: AREDN: aka. The Amateur Radio Emergency Data Network

Michael Ford, WZ0C, and friends

Wednesday, 19 April – Business Meeting ~ 7:30

Location: Zoom Teleconference

Wednesday, 17 May – ANNUAL Membership Meeting ~ 7:30

Location: Marlborough Central Fire Station + Zoom Teleconference

Topic: Elections + TBD

MMRA Leaders

Executive Board — Officers

President	Dave Hornbaker	N1DCH
Vice President	John Spencer	WA1MDD
Secretary	Jason Peardon	W1HFP
Treasurer	Kevin Paetzold	K1KWP
Clerk	Stephen Babbitt	KC1LPZ

Executive Board — Directors

Director »2023	Bob DeMattia	K1IW
Director »2023	Roger Coulson	WA1NVC
Director »2024	Rob Evans	N1BE
Director »2024	James Lee	N1DDK

Technical Officer

Technical Officer	Bob DeMattia	K1IW
-------------------	--------------	------

President Emeritus

Bob DeMattia	K1IW
--------------	------

Technical Officer Emeritus

Bryan Cerqua	W1BRI
--------------	-------

Repeater Trustees

Belmont 145.43	Ed Curley	KC1CLA*
Billerica 147.12	Mike Rioux	W1USN*
Boston 146.82	John Mullaney	K1BOS*
Boston 927.0625	Rick Zach	K1RJZ*
Brookline 145.16	Joyce DeMattia	K1MRA*
Brookline Rcv 146.82	Bob Phinney	K5TEC*
Burlington 224.88	Bruce Pigott	KC1US*
Hopkinton 449.575	Bryan Cerqua	W1BRI*
Marlborough 53.81	Bryan Cerqua	W1BRI*
Marlborough: 29.68, 144.39, 147.27, 223.94, 448.225, 449.925, 927.70 Lowell 442.25		
all as W1MRA	Bill Northup	N1QPR*
Mendon 146.61	Kevin Paetzold	K1KWP*
N. Reading 146.715	Bruce Pigott	KC1US*
N. Reading 446.775	Larry Banks	W1DYJ*
Quincy 224.40	Bill Dunn	N1KUG*
Quincy 146.67	Bryan Cerqua	W1BRI*
Weston 146.79	Rob Evans	N1BE*
Weston 224.70	Eddie Mulhern	N1NOM*
Weston 442.70	Dave Hornbaker	N1DCH*

Additional, non-Voting

Newsletter Editor	Larry Banks	W1DYJ*
Emerg. Coord.	Kevin Paetzold	K1KWP*
Pub. Serv. Coord.	Bruce Pigott	KC1US*
VEC Liaison	Ron Rothman	WO1E*
Net Manager	Larry Banks	W1DYJ*
Web Page Editor	Bob DeMattia	K1IW*
Social Media Coord.	Steve Umans	K8ZBE*

* Appointed

Don't Forget — Join Us!

Every Tuesday @ 8 PM

Technical, Informational and Other Stuff Net

The MMRA's repeaters are linked Tuesday nights for the TIOS Net. Keep up with what's happening in the MMRA and ask your ham related questions.

Net Control Operators:

Week 1	W1DYJ	Larry Banks
Week 2	KB1OQA	Tom Turner
Week 3	KC1CLA	Ed Curley
Week 4	K1KWP	Kevin Paetzold
Week 5	K1BTZ	Jonathan Traum

To connect using Echolink during the Net:

- Echolink Conference *NEW-ENG2*

NOTE: we need another NC to be available as a substitute. If you are interested, email W1DYJ@mmra.org

Contacting the MMRA



Members: mmra@groups.io

Note: This may take some time.

You must be approved by the moderator.

Officers: contact@mmra.org

Control Ops: control-ops@mmra.org



<http://www.mmra.org/>



<https://www.facebook.com/mmraham>

MMRA VE SESSIONS

Check out <https://www.mmra.org/exam.html> or email ve@mmra.org

Ask your friends to become a member Just let them know that it is not fully automated. Although they can log into the MMRA website immediately, they need to be manually processed. This could take up to a week.

If you haven't updated your MMRA profile in a while,
now is the time!

Go to < MMRA.ORG > and log in to do so.

Previous issues of the MMRA Newsletter are available
at: www.mmra.org > [Newsletter Archive](#) (on the left)

Heavy Hitters Traffic Net

This net is active on our repeaters Sunday to Friday evenings from 10—11 PM. Active repeaters are:

2m: Mendon (146.61), Quincy (146.67), North Reading (146.715), Boston (146.82), and Marlborough (147.27)

220: Marlborough (223.94), Quincy (224.40), Weston (224.70), and Burlington (224.88),

440: Lowell (442.25), North Reading (446.775), Hopkinton (449.575), and Marlborough (449.925)



NEW ENGLAND SCI-TECH

New England Sci-Tech Inc is a new 501(c)(3) STEM education center, amateur radio training center, and maker space located at 16 Tech Circle, Natick. It is home to New England Amateur Radio Inc (NE1AR) and the youth radio club Sci-Tech Amateur Radio Society (STARS). NE Sci-Tech welcomes memberships and donations via www.NESciTech.org or www.NE1AR.org.

Get connected on the MMRA Repeater System ~ Dave Hornbaker N1DCH

What is the best way to get connected on the MMRA repeater system? Try announcing yourself! Just say your call sign followed by "listening". If you want, you can include the last 3 digits of the repeater frequency. For example, "N1DCH listening" or maybe "N1DCH listening on 925", you may very well get a response. Try to connect by announcing yourself several times.

Most of the time, Marlborough Hub1 (449.495) is linked to the following repeaters, Boston (146.820), North Reading (446.775), Mendon (146.610), Lowell (442.250), and Hopkinton (449.575). Remember that when the repeaters are linked, you need to wait two or three seconds after you key up and before you speak. This is especially important on the TlaOS net on Tuesday when most of the repeaters are linked.

You can also link (and delink) the repeaters yourself. See the information you received when you became a member, or check the [User Control Codes](#) once you log into the MMRA web.

Try one of the non-linked repeaters too. There are Hams monitoring them as well. For more information on the repeater network and how it is linked at various times, check out https://mmra.org/repeaters/repeater_linking.html.